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## (54) NAVIGATION SYSTEM AND MEDIUM WHICH STORES NAVIGATION PROGRAM USING THE SYSTEM

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To obtain a realistic road map display by stereoscopically displaying a topography employing the height value data based on an actual topography, arranging map display elements such as roads and names of the places on the topography to build a stereoscopic map and displaying it.

**SOLUTION:** Display reference point location coordinates and a line of sight direction angle are inputted by a display reference point inputting device 1. A display objective region determining section 3-1 determines the objective region of the map to be displayed on a screen. A topographical shape modeling section 3-2 reads topographical shape data from a topographical data storage section 2 and the model of the topographical shape. Then, a display reference point height determining section 3-3 determines the height value of a

display reference point and a view point coordinate determining section 3-4 determines the view point coordinates of a perspective projection transformation. Then, a coordinate transformation section 3-5 performs the transformation of the topographic shape model and the map display elements, in which height values are determined, based on the view point coordinates and the line of sight direction angle. Then, a plotting processing section 3-7 generates a stereoscopic map picture from the transformed data and displays the picture on a picture display device 4.

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